

CHAPTER 32 OCCUPATIONAL SAFETY: WINDOW CLEANING

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3200 GENERAL PROVISIONS

- 3200.1 The requirements of this chapter shall apply to all window-cleaning operations that are performed by an employee from a position that is wholly or partially on the outside of a building more than one (1) story high, or in which the sills of windows are located ten feet (10 ft.) or more above the grade or the adjoining flat roof.
- 3200.2 The provisions of this chapter shall apply to the cleaning of the inside face of any window where the window cleaner cleans the window while resting on a level that is ten feet (10 ft.) or more above the floor.
- 3200.3 The requirements of this chapter shall not apply to the following:
- (a) A dwelling house less than three (3) stories high;
 - (b) A dwelling house occupied by less than three (3) families; and
 - (c) A window opening to a fire escape balcony or other balcony that is two feet (2 ft.) or more wide and twelve inches (12 in.) or less below the window sill.
- 3200.4 Upon the written application of an employer, the Minimum Wage and Industrial Safety Board may approve the use of existing anchor installations, safety devices, and methods of cleaning windows other than those specified in this chapter.

AUTHORITY: Unless otherwise noted, the authority for this chapter is the District of Columbia Minimum Wage Act approved September 19, 1918, 40 *Stat.* 960, D.C. Code §§36-401 through 36-422; as amended by An Act approved October 14, 1941, Title II entitled 'Industrial Safety,' 55 *Stat.* 738, D.C. Code §§36-431 through 36-442; paragraphs 283 and 284 of §402 of Reorganization Plan No. 3 of 1967; and Reorganization Order No. 36, C.O. 302, 853/14, June 16, 1953, as amended.

SOURCE: Sections 11-2503 and 11-2504, effective September 1, 1958, ch. 25, 5 DCR 28 (August 11, 1958); 11B DCRR, Special Edition.

EDITOR'S NOTE: The rules published in this chapter have been superseded in whole or in part by rules promulgated by the Occupational Safety and Health Administration, U.S. Department of Labor and published at 29 CFR Part 1926 (July 1, 1995 ed.). The Minimum Wage and Industrial Board (Board) referenced in this chapter was abolished by Reorganization Plan No. 1 of 1978, effective June 27, 1978. Reorganization Plan No. 1 of 1978 transferred the powers, duties and functions of the Board to the Director of the Department of Labor, and also established a new Occupational Safety and Health Board. Reorganization Plan No. 1 of 1980, effective April 17, 1980; and Reorganization Plan No. 3 of 1980, effective January 10, 1981, transferred those functions to the Department of Employment Services.

3201 GENERAL SAFETY PRECAUTIONS

- 3201.1 In buildings having windows with sills ten feet (10 ft.) or more above the grade and constructed so that it is necessary for a person to clean the windows from the outside, approved safety devices for the protection of the window cleaner shall be provided and used.
- 3201.2 In buildings where the window sill extends less than four and one-half inches (4½ in.) from the window frame, an approved portable auxiliary sill or other approved device shall be provided and used, in addition to an approved safety belt.
- 3201.3 Portable sills shall not be less than ten inches (10 in.) wide or less than thirty inches (30 in.) long.
- 3201.4 Portable sills or other devices shall be designed and made so that they are safely held in place and can be readily put in position and removed.
- 3201.5 The use of lag screws or expansion bolts as a means of fastening anchors is prohibited.
- 3201.6 Window cleaners shall use safety devices provided for their protection.
- 3201.7 Window cleaners shall not pass from window to window on the outside except where a railing is installed.
- 3201.8 All anchor installations shall be maintained in a safe condition.
- 3201.9 Where windows are constructed so that it is usual and practical to clean them from the inside, employers shall not allow any alterations, changes, or obstructions that will make it necessary to clean the windows from the outside, unless safety devices are provided.

SOURCE: Sections 11-2506 through 11-2513, and 11-2516, effective September 1, 1958, ch. 5, 5 DCR 28 (August 11, 1958); 11B DCRR, Special Edition.

3202 USE OF CORROSIVE SUBSTANCES

- 3202.1 Acids or other corrosive substances may be used for cleaning windows only under the conditions set forth in this section.
- 3202.2 A scaffold shall be used.

- 3202.3 If the scaffold that is used is of the swinging type, it shall be suspended by a wire rope.
- 3202.4 The use of a fiber rope of any kind is prohibited.
- 3202.5 A highly dilute solution that is not more than five percent (5%) hydrochloric (muriatic) acid shall be used.
- 3202.6 The cleaner shall wear rubber gloves and shall apply the solution with a brush.
- 3202.7 All parts of the scaffolding and other equipment shall be liberally washed with water after each use to prevent corrosive reactions.

SOURCE: Section 11-2514, effective September 1, 1958, ch. 25, 5 DCR 28 (August 11, 1958); 11B DCRR, Special Edition.

3203 EQUIPMENT

- 3203.1 All equipment required by this chapter shall be maintained in good repair at all times.
- 3203.2 Any equipment or material that is defective in a manner or to an extent that endangers employees shall not be used.
- 3203.3 Prior to approval by the Board, anchors, anchor fittings, and safety belts shall be tested as specified in this section.
- 3203.4 Tests as required by §203.3 shall be performed by a recognized, disinterested authority acceptable to the Board.
- 3203.5 The complete report of the testing authority shall include a detailed description of the test sample, the test procedure, and the test results.
- 3203.6 Two (2) copies of the complete report of the testing authority shall be submitted to the Board with the application for approval.
- 3203.7 Each approved anchor and safety belt shall bear a name or mark that readily identifies its manufacturer, and shall also bear an approval number and any other identification as the Board may prescribe in letters that are easily legible.

SOURCE: Sections 11-2515, 11-2517 through 11-2519, effective September 1, 1958, ch. 25, 5 DCR 28 (August 11, 1958); 11B DCRR, Special Edition.

3204 ANCHOR MATERIAL AND SPECIFICATIONS

- 3204.1 Anchors shall be of the twin or double-head type designed for attachment to window frames or mullions by two (2) through bolts to each anchor.
- 3204.2 Anchors shall be made of the following metals:
- (a) Heavy forged bronze;

- (b) Stainless steel;
 - (c) Monel metal, or copper-nickel alloy equivalent to monel metal; or
 - (d) Other approved durable corrosion-resistive metal of equal strength and toughness.
- 3204.3 Metals used in the manufacture of anchors and anchor fittings shall have an ultimate tensile strength of not less than fifty-five thousand pounds per square inch (55,000 lbs./in.²), with an elongation of at least twenty-five percent (25%) in two inches (2 in.) and shall have corrosion resistance of sixty percent (60%) as compared to copper.
- 3204.4 Anchors shall be seven-sixteenths of an inch (7/16 in.) in diameter, and the head of each anchor shall be three-quarters of an inch (3/4 in.) across the flat and not less than five-sixteenths of an inch (5/16 in.) thick.
- 3204.5 Anchors shall be designed or spaced so that it is impossible to attach the safety belt terminal to a single head.
- 3204.6 Drop forgings shall have one-eighth inch (1/8 in.) radius fillets at all places where diameters or other dimensions change. Wall flanges shall have a diameter that is not less than one and one-quarter inches (1 1/4 in.).
- 3204.7 The space between the anchor head and the flange or window frame shall be not less than one-half of an inch (1/2 in.) or more than seven-eighths of an inch (7/8 in.).
- 3204.8 Double anchor heads shall be spaced not less than two inches (2 in.) or more than three inches (3 in.) from the centers.
- 3204.9 The back face of anchors for installation in wood window frames or mullions shall be provided with at least two (2) sharp lugs to prevent turning of the anchor after installation.
- 3204.10 All anchors and anchor fittings shall be capable of withstanding the following tests:
- (a) A tension pull of six thousand (6,000) pounds without fracture. The tension shall be applied through a belt terminal and in the direction that the anchor must withstand in service when a person falls;
 - (b) A drop test of three hundred fifty (350) pounds dead weight (not sand) falling a distance of four feet (4 ft.) without fracture. The connection between the weight and anchor shall be a standard safety belt or ropes or cables not over six feet (6 ft.) long; and
 - (c) An impact test of an iron weight of thirty-two (32) pounds falling free a distance of four feet (4 ft.), and striking the head of the anchor without fracture.

SOURCE: Sections 11-2520 through 11-2527, effective September 1, 1958, ch. 25, 5 DCR 28 (August 11, 1958); 11B DCRR, Special Edition.

3205 ANCHOR INSTALLATIONS: GENERAL PROVISIONS

3205.1 The anchors on the building to which the belt shall be fastened shall be installed in the side frames of the window or in the mullions at a point not less than forty-two inches (42 in.) or more than fifty-one inches (51 in.) above the window sill.

3205.2 All window frames to which anchors are attached shall be in sound condition and shall be securely fastened in place.

SOURCE: Sections 11-2528 and 11-2529, effective September 1, 1958, ch. 25, 5 DCR 28 (August 11, 1958); 11B DCRR, Special Edition.

3206 ANCHOR INSTALLATIONS: WOOD

3206.1 In wood construction, anchors, bolts, and other approved fittings shall be securely fastened to the window frame or mullion in accordance with this section.

3206.2 Two (2) through bolts having a diameter of not less than three-eighth inches ($\frac{3}{8}$ in.) that is made from the same material as the anchor shall pass through the entire window frame or mullion to secure each anchor. The through bolts shall be securely fastened by a washer and nut.

3206.3 The ends of the through bolts required by §3206.2 shall be upset to prevent loosening or removal of the nuts.

SOURCE: Section 11-2530(a), effective September 1, 1958, ch. 25, 5 DCR 28 (August 11, 1958); 11B DCRR, Special Edition.

3207 ANCHOR INSTALLATIONS: HOLLOW METAL

3207.1 In hollow metal construction, anchors, bolts, and other approved fittings shall be securely fastened to the window frame or mullion in accordance with this section.

3207.2 Two (2) through bolts having a diameter of not less than three-eighth inches ($\frac{3}{8}$ in.) that is made of the same material as the anchor shall pass through the entire window frame or mullion to secure each anchor. Each through bolt shall be securely fastened by a washer and nut.

3207.3 The ends of the through bolts required by §3207.2 shall be upset to prevent loosening or removal of the nuts.

3207.4 As an alternate, where through bolts are impracticable, anchors shall be attached by two (2) bolts of the same material as the anchor and having a diameter that is not less than three-eighths inches ($\frac{3}{8}$ in.) that passes through the frame, and a steel reinforcing plate that is three-eighth inches ($\frac{3}{8}$ in.) thick and not less than

six inches (6 in.) long placed on the inside of the frame and secured nuts and lock washers.

- 3207.5 Where it is impracticable to provide nuts and lock washers, the reinforcing plate may be tapped to receive screws having a three-eighth of an inch ($3/8$ in.) diameter. The screws shall extend through the plate.
- 3207.6 All anchors and anchor fastenings shall be provided with means to prevent them from turning, backing off, or becoming loose.
- 3207.7 On new frames, the reinforcing plate shall be in the form of a "Z" or some other equivalent, one (1) portion of which shall reach around behind the exposed face of the frame and be bolted, riveted, or welded to a part of the frame protected by the masonry.

SOURCE: Section 11-2530(b), effective September 1, 1958, ch. 25, 5 DCR 28 (August 11, 1958); 11B DCRR, Special Edition.

3208 ANCHOR INSTALLATIONS: SOLID METAL

- 3208.1 In solid metal construction, anchors, bolts, and other approved fittings shall be securely fastened to the window frame or mullion in accordance with this section.
- 3208.2 Anchor fittings shall be attached by three-eighth inch ($3/8$ in.) bolts, made of the same material as the anchor.
- 3208.3 The bolts shall pass through the frame and shall be securely held in place by nuts and washers on the inside.
- 3208.4 The ends of the bolts shall be upset to prevent loosening or removal of the nuts.
- 3208.5 Where the nature of the solid metal frame construction is such that the method described in §§3208.2 through 3208.4 cannot be followed, it shall be permissible to drill and tap the metal frame to a depth of at least three-eighth inch ($3/8$ in.), and to install the anchor with at least two (2) three-eighth inch ($3/8$ in.) screws, made of the same material as the anchor.
- 3208.6 All anchors and anchor fastenings shall be provided with means to prevent them from turning, backing off, or becoming loose.
- 3208.7 Anchor fittings having a single threaded section and merely screwed into reinforcing plates shall not be acceptable.
- 3208.8 All screws used in the installation of anchors on metal frame construction shall have the threads terminate far enough from the screw head to prevent weakening due to undercutting.

SOURCE: Section 11-2530(c), effective September 1, 1958, ch. 25, 5 DCR 28 (August 11, 1958); 11B DCRR, Special Edition.

3209 SPECIAL WINDOWS

- 3209.1 In buildings with windows where the distance between anchors is greater than six feet (6 ft.), special approved anchors shall be installed at each side of the window frame. These anchors shall be set forty-two inches (42 in.) above the window sills.
- 3209.2 When extra-width windows are being cleaned, a brass cable or chain that can readily be attached to the anchors to be used as a back support for the window cleaners shall be provided and used.
- 3209.3 Standard belt anchors to which the window cleaner shall attach one (1) end of his or her belt shall be installed above the special anchors on extra-width windows.
- 3209.4 Where masonry openings for mullion windows are more than five feet six inches (5 ft. 6 in.) wide, at least one (1) anchor fitting shall be installed in each mullion.
- 3209.5 Casement windows that cannot be wholly cleaned while standing at the inside shall have anchor fittings installed in the same manner as specified for other windows.
- 3209.6 Provision shall be made so that the outside of horizontally projected or pivoted windows may be cleaned without necessitating the window cleaner's leaning against, or putting his or her weight on, the sash.

SOURCE: Sections 11-2531 through 11-2535, effective September 1, 1958, ch. 25, 5 DCR 28 (August 11, 1958); 11B DCRR, Special Edition.

3210 SAFETY BELTS AND BELT FITTINGS

- 3210.1 When windows are cleaned from a sill, an approved safety belt of woven fabric or other approved material shall be provided, maintained, and used.
- 3210.2 Fabric used in the manufacture of safety belts shall be made of first quality material, which shall be treated against mildew by a non-acid and non-corrosive anti-mildew agent.
- 3210.3 Stitching of the material on safety belts shall be done with hot waxed, best quality linen thread, and shall be lock-stitched.
- 3210.4 Fabric ends shall be bound or dipped in wax to prevent unraveling.
- 3210.5 Belt terminals and other metal belt fittings (except rivets and thimbles) shall be of approved heavy forged bronze, monel metal or copper-nickel alloy equivalent to monel metal, stainless steel, or other approved durable corrosion-resistive metal of equal strength and toughness.
- 3210.6 Non-corrosive metal thimbles shall be provided where straps are secured to eyes or rings.
- 3210.7 The edges of thimbles shall be rounded and finished smooth, and shall run freely.

- 3210.8 Each safety belt shall be designed and constructed so that it will be impossible for the safety terminals to pass through their fastenings on the body belt of the window cleaner, should one terminal become loosened from its window anchor.
- 3210.9 The belt terminals shall have slots not less than four inches (4 in.) long; and the slots shall be one-half inch (1/2 in.) wide, with a tolerance plus or minus one-thirty second of an inch (1/32 in.).
- 3210.10 That portion of the slot that passes over the anchor head shall be seven sixteenths of an inch (7/16 in.) deep by one inch (1 in.) wide, and shall have an approved catch to prevent the automatic or accidental release of the terminal.
- 3210.11 Right-angle sections of forgings shall have one-eighth inch (1/8 in.) radius fillets in all inside corners.
- 3210.12 Where the anchor head comes in contact with the belt terminal while in use, the terminal forging shall be not less than one-quarter of an inch (1/4 in.) thick.
- 3210.13 Rope, if used, shall be not smaller than one-half inch (1/2 in.) Yacht Manila, or its equivalent.
- 3210.14 Belt terminals and other metal belt fittings shall be capable of withstanding a tension pull of six thousand (6,000) pounds without fracture.
- 3210.15 The complete assembly of the safety belt shall be capable of withstanding a drop test of three hundred fifty (350) pounds dead weight (no sand) falling a distance of four feet (4 ft.) without failure, with one (1) terminal only being attached. The connection between the weight and the belt shall be the waistband of the belt.
- 3210.16 Once a safety belt or any of its parts have been used for testing purposes, the belt or any of its parts shall not be used by a window cleaner in the conduct of his or her work.

SOURCE: Sections 11-2536 through 11-2545, effective September 1, 1958, ch. 25, 5 DCR 28 (August 11, 1958); 11B DCRR, Special Edition.

3211 USE AND MAINTENANCE OF SAFETY BELTS

- 3211.1 A window cleaner using a safety belt shall attach one (1) belt terminal to the anchor before stepping out onto the sill, and one (1) belt terminal shall remain attached to the anchor while stepping back into the building.
- 3211.2 During the operation of window cleaning, both belt terminals shall be attached to the anchors.
- 3211.3 Safety belts shall be maintained in good repair at all times.
- 3211.4 Each window cleaner's safety belt shall be examined frequently by the person employing, directing, or permitting the window cleaner to clean windows, and shall also be examined by the window cleaner before being used each day.

- 3211.5 No belt shall be used that does not provide the safety as required by this chapter.
- 3211.6 All belts shall be stored and handled so that rust or injury to them is prevented.
- 3211.7 No belt shall be used that has been affected by mildew, by the action of acid, or by any other corrosive or deteriorating agent.
- 3211.8 Safety belts shall not be stored in the same room with acids.
- 3211.9 Safety belts shall not be stored where they are likely to come in contact with sharp-edged tools or equipment.
- 3211.10 Belt straps that have been worn or cut so as to show broken fabric threads shall be replaced by new straps.
- 3211.11 No belt terminal shall be used if any point in the slot will accommodate a nine-sixteenth inch (9/16 in.) plug gauge.
- 3211.12 No link shall be used in the belt terminal strap if any cross-sectional dimension of the link is less than three-thousandths of an inch (0.300 in.).

SOURCE: Sections 11-2546 through 11-2554, effective September 1, 1958, ch. 25, 5 DCR 28 (August 11, 1958); 11B DCRR, Special Edition.

3299 DEFINITIONS

- 3299.1 When used in this chapter, the following terms and phrases shall have the meaning ascribed:

Anchor - the fitting fastened to the window frame to which the safety belt terminal is attached.

Approved - approved by the Minimum Wage and Industrial Safety Board.

Director - the Director of Industrial Safety.

Double-head anchor (four-bolt system) - an anchor that has two (2) heads for attachments to each side of the window frame by two (2) through bolts for each anchor.

Employee - any person rendering service to an employer for compensation.

Employer - any person, firm, corporation, partnership, stock association, agent, manager, representative, or foreman, or other persons having control or custody of any industrial employment, place of employment, or of any employee. It shall include the District of Columbia or any instrumentality of the District, or the United States or any instrumentality of the United States.

Injury frequency rate - the number of disabling injuries per million employee-hours, or stated another way:

3299.1 (Continued)

$$\text{Frequency Rate} = \frac{\text{Number of disabling injuries} \times 1,000,000}{\text{Number of employee-hours}}$$

Window cleaning - the operation of washing, wiping, or other methods of cleaning windows.

SOURCE: Section 11-2502, effective September 1, 1958, ch. 25, 5 DCR 28 (August 11, 1958); 11B DCRR, Special Edition.